

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name: VIASAT-1		e. Estimated Date of Placement into Service:		i. Will the space station(s) operate on a Common Carrier Basis: N	
b. Construction Commencement Date:		f. Estimated Lifetime of Satellite(s): 15 Years		j. Number of transponders offered on a common carrier basis:	
c. Construction Completion Date:		g. Total Number of Transponders:		k. Total Common Carrier Transponder Bandwidth: MHz	
d1. Est Launch Date Begin:	d2. Est Launch Date End:	h. Total Transponder Bandwidth (no. transponders x Bandwidth) MHz		i. Orbit Type: Mark all boxes that apply: <input checked="" type="checkbox"/> GSO <input type="checkbox"/> NGSO	

S2. OPERATING FREQUENCY BANDS Identify the frequency range and transmit/receive mode for all frequency bands in which this station will oper
Also indicate the nature of service(s) for each frequency band.

Frequency Band Limits				e. T/R Mode	f. Nature of Service(s): List all that apply to this band
Lower Frequency (.Hz)		Upper Frequency (.Hz)			
a. Numeric	b. Unit (K/M/G)	c. Numeric	d. Unit (K/M/G)		
29500	M	29503.5	M	R	Fixed Satellite Service
19700.5	M	19703.5	M	T	Fixed Satellite Service
29998.9995	M	29999.0005	M	R	Fixed Satellite Service
20198.9995	M	20199.0005	M	T	Fixed Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 115.1 W		b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: ViaSat, Inc. has Commission authorization to access the U.S. to provide FSS services using certain Ka-band frequencies from the 115.1 W.L. location.
Longitudinal Tolerance or E/W Station-Keeping:		f. Inclination Excursion or N/S Station-Keeping Tolerance:		
d. Toward West: 0.05 Degrees	e. Toward East: 0.05 Degrees	Range of orbital are in which adequate service can be provided (Optional): g. Westernmost: _____ Degrees _____ E/W _____ h. Easternmost: _____		
i. Reason for service are selection (Optional):				

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S4. ORBITAL INFORMATION FOR NON-GEOSTATIONARY SATELLITES ONLY

S4a. Total Number of Satellites in Network or System:

S4c. Celestial Reference Body (Earth, Sun, Moon, etc.):

S4b. Total Number of Orbital Planes in Network or System:

S4d. Orbit Epoch Date:

For each Orbital Plane Provide:

(e) Orbital Plane No.	(f) No. of Satellites in Plane	(g) Inclination Angle (degrees)	(h) Orbital Period (Seconds)	(i) Apogee (km)	(j) Perigee (km)	(k) Right Ascension of the Ascending Node (Deg.)	(l) Argument of Perigee (Degrees)	Active Service Arc Range (Degrees)		
								(m) Begin Angle	(n) End Angle	(o) Other

S5. INITIAL SATELLITE PHASE ANGLE For each satellite in each orbital plane, provide the initial phase angle.

(a) Orbital Plane No.	(b) Satellite Number	(c) Initial Phase Angle (Degrees)

NO NGSO DATA FILED

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S6. SERVICE AREA CHARACTERISTICS for each service area provide:

(a) Service Area ID	(b) Type of Associated Station (Earth or Space)	(c) Service Area Diagram File Name (GXT File)	(d) Service Area Description. Provide list of geographic areas (state postal codes or ITU 3-ltr codes), satellites or Figure No. of Service Area Diagram.
SA1	S		Areas around Summerset, South Dakota and Milford, Utah.
SA2	S		Visible Earth.
SA3	S		CONUS plus Hawaii, Alaska

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S7. SPACE STATION ANTENNA BEAM CHARACTERISTICS For each antenna beam provide:

(a) Beam ID	(b) T/R Mode	Isotropic Antenna Gain		(e) Pointing Error (Degrees)	(f) Rotational Error (Degrees)	(g) Min. Cross- Polar Iso- lation (dB)	(h) Polar- ization Switch- able? (Y/N)	(i) Polarization Alignment Rel. Equatorial Plane (Degrees)	(j) Service Area ID	Transmit			Receive					
										(k) Input Losses (dB)	(l) Effective Output Power (W)	(m) Max. EIRP (dBW)	(n) System Noise Temp (k)	(o) G/T Max. Gain Pt. (db/K)	(p) Min. Saturation Flux Density (dBW/m2)	Input Attenuator (dB)		
		(q) Max. Value	(r) Step Size															
TCR	R	52.9	51.3	0.05	0.05	26	N		SA1						-0.2			
TCL	R	52.9	51.3	0.05	0.05	26	N		SA1						-0.2			
TMR	T	52.3	50.9	0.05	0.05	30	N		SA1	7.5	0.002	25						
TML	T	52.3	50.9	0.05	0.05	30	N		SA1	7.5	0.002	25						
OMN	R	3	-1	0.05	0.05	30	N		SA2				2455	-30.9				
OMN	R	3	-1	0.05	0.05	30	N		SA2				2455	-30.9				
OMN	T	3	-1	0.05	0.05	30	N		SA2	5.5	12.6	14						
OMN	T	3	-1	0.05	0.05	30	N		SA2	5.5	12.6	14						
BNR	R	52.9	51.3	0.05	0.05	26	N		SA1						-3			
BNL	R	52.9	51.3	0.05	0.05	26	N		SA1						-3			
BCN	T	24.4	20.8	0.05	0.05	30	N		SA3	2.4	0.91	24						

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S8. ANTENNA BEAM DIAGRAMS For each beam pattern provide the reference to the graphic image and numerical data:
Also provide the power flux density levels in each beam that result from the emission with the highest power flux density.

(a) Beam ID	(b) T/R Mode	(c) Co-or Cross Polar Mode ("C" or" X")	(d) GSO Ref. Orbital Longitude (Deg. E/W)	(e) NGSO Antenna Gain Contour Description (Figure/Table/ Exhibit)	(f) GSO Antenna Gain Contour Data (GXT File)	Max. Power Flux Density (dBW/M2/Hz)				
						At Angle of Arrival above horizontal (for emission with highest PFD)				
						(g) 5 Deg	(h) 10 Deg	(i) 15 Deg	(j) 20 Deg	(k) 25 Deg
TCR	R	C	-115.1		TCR.gxt					
TCL	R	C	-115.1		TCL.gxt					
TMR	T	C	-115.1		TMR.gxt	-157.5	-157.5	-157.5	-157.5	-157.5
TML	T	C	-115.1		TML.gxt	-157.5	-157.5	-157.5	-157.5	-157.5
OMN	T	C	-115.1			-148.1	-148.1	-148.1	-148.1	-148.1
OMN	T	C	-115.1			-148.1	-148.1	-148.1	-148.1	-148.1
BNR	R	C	-115.1		BNR.gxt					
BNL	R	C	-115.1		BNL.gxt					
BCN	T	C	-115.1		BCNR.gxt	-139.6	-139.5	-139.3	-139.1	-138.9

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S9. SPACE STATION CHANNELS For each frequency channel provide: S10. SPACE STATION TRANSPONDERS For each transponder provide:

(a) Channel No.	(B) Assigned Bandwidth (kHz)	(c) T/R Mode	(d) Center Frequency (MHz)	(e) Polarization (H, V, L, R)	(f) TTC or Comm Channel (T or C)
CMD1	1000	R	29500.5	L	T
CMD2	1000	R	29503	R	T
CMD3	1000	R	29500.5	R	T
CMD4	1000	R	29503	L	T
TLM1	1000	T	19701	L	T
TLM2	1000	T	19703	R	T
BCN1	1	R	29999	R	T
BCN2	1	R	29999	L	T
BCN3	1	T	20199	R	T

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
TC1		CMD1	TCL		
TC2		CMD2	TCR		
TC3		CMD3	TCR		
TC4		CMD4	TCL		
TM1				TLM1	TML
TM2				TLM2	TMR
TC5		CMD1	OMNUL		
TC6		CMD2	OMNUR		
TC7		CMD3	OMNUR		
TC8		CMD4	OMNUL		
TM3				TLM1	OMNDL
TM4				TLM2	OMNDR
BN1		BCN1	BNR		
BN2		BCN2	BNL		
BN3				BCN3	BCNR

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S11. DIGITAL MODULATION PARAMETERS For each digital emission provide:

(a) Digital Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) No. of Phases	(e) Uncoded Data Rate (kbps)	(f) FEC Error Correction Coding Rate	(g) CDMA Processing Gain (dB)	(h) Total C/N Performance Objective (dB)	(i) Single Entry C/I Objective (dB)
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S12. ANALOG MODULATION PARAMETERS For each analog emission provide:

(a) Analog Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) Signal Type	(e) Channels per Carrier	Multi-channel Telephony				(j) Video Standard NTSC, PAL, etc.	(k) Video Noise- Weighting (dB)	(l) Video and SCPC/FM Modulation Index	(m) SCPC/FM Compander, Preemphasis, and Noise Weighting (dB)	(n) Total C/N Performance Objective (dB)	(o) Single Entry C/I Objective (dB)
					(f) Ave. Companded Talker Level (dBm0)	(g) Bottom Baseband Freq. (MHz)	(h) Top Baseband Freq. (MHz)	(i) RMS Modulation Index						
A1	1M00F2D	1000		1								10	22.2	
A2	1M00G2D	1000		1								9	21.2	
A3	1K00NON	1		1								14	26.2	
A4	1K00NON	1		1								10	22.2	

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S13. TYPICAL EMISSIONS For each planned type of emission provide:

Associated Transponder ID Range (a) Start (b) End		Modulation ID		(e) Carriers per Transponder	(f) Carrier Spacing (kHz)	(g) Noise Budget Reference (Table No.)	(h) Energy Dispersal Bandwidth (kHz)	Receive Band (Assoc. Transmit Stn)			Transmit Band (This Space Station)			
		(c) Digital (Table S11)	(d) Analog (Table S12)					(i) Assoc. Stn. Max. Antenna Gain (dBi)	Assoc. Station Transmit Power (dBW) (j) Min. (k) Max.		EIRP (dBW) (l) Min. (m) Max.		(n) Max. Power Flux Density (dBW/m ² /Hz)	(o) Assoc. Stn Rec. G/T (dB/K)
TC1	TC4		A1	1		TC OS.doc		65.4	-12.4	-9.4				
TM1	TM2		A2	1		TM OS.doc					24	25	-137.5	37.4
TC5	TC8		A1	1		TC TO.doc		70	15.8	19.8				
TM3	TM4		A2	1		TM TO.doc					10	14	-148.1	37.4
BN1	BN2		A3	1		BCN AT.doc		65.5	-11.9	-11.9				
BN3	BN3		A4	1		BCN UPC.doc					20.4	24	-138.6	37.4

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S14. Is the space station(s) controlled and monitored remotely? If Yes, provide the location and telephone number of the TT and C control point(s): Yes

Remote Control (TT C) Location(s):

S14a: Street Address: 1100 E. Geothermal Rd.			
S14b. City: Milford	S14c. County: Wayne	S14d. State/Country UT	S14e. Zip Code: 84715
S14f. Telephone Number: 720-493-7300		S14g. Call Sign of Control Station (if appropriate): E110026	

Remote Control (TT C) Location(s):

S14a: Street Address: 11040 Liberty Street			
S14b. City: Summerset	S14c. County: Meade	S14d. State/Country SD	S14e. Zip Code: 57718
S14f. Telephone Number: 720-493-7300		S14g. Call Sign of Control Station (if appropriate): E110015	

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S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a. Mass of spacecraft without fuel (kg): 3168	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 3050		
S15c. Mass of spacecraft and fuel at launch (kg): 6218	S15f. Length (m): 9.35	S15i. Payload: 0.71
S15d. Mass of fuel, in orbit, at beginning of life (kg): 350	S15g. Width (m): 26.05	S15j. Bus: 0.77
S15e. Deployed Area of Solar Array (square meters): 74.2	S15h. Height (m): 8.4	S15k. Total: 0.55

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

Spacecraft Subsystem	Electrical Power (Watts) At Beginning of Life		Electrical Power (Watts) At End of Life	
	At Equinox	At Solstice	At Equinox	At Solstice
Payload (Watts):	(a): 10292	(f): 10292	(k): 10292	(p): 10292
Bus (Watts):	(b): 2988	(g): 1320	(l): 2988	(q): 1320
Total (Watts):	(c): 13280	(h): 11612	(m): 13280	(r): 11612
Solar Array (Watts):	(d): 14375	(i): 13000	(n): 13666	(s): 12855
Depth of Battery Discharge (%):	(e) 74.5 %	(j) %	(o) 74.5 %	(t) %

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
b. Are the appropriate service area coverage requirements of § 25.143(b)(ii) and (iii), or § 25.145(c)(1) and (2) met?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input checked="" type="checkbox"/> N/A
c. Are the frequency tolerances of § 25.202(e) and the out-of-band emission limits of § 25.202(f)(1), (2) and (3) met?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A

In addition to the information required in this Form, the space station applicant is required to provide all the information specified in Section 25.114 of the Commission's rules, 47 C.F.R § 25.114.